

af - Cutouts, Distribution, Open

Manufacturer	Type	Voltage Rating
ABB	ICX	15, 27 kV
	LBU-II	15, 27 kV
Cooper Power Systems	S1	15, 27 kV
	L	15, 27 kV
Hubbell (Chance)	C	15, 27, 35 kV
	C (loadbreak)	15, 27, 35 kV
	C-Polymer	15 kV
	C-Polymer (Loadbreak)	15 kV
Kearney/Cooper Power Systems	HX	15, 27 kV
Power Line Hardware	DHC	15, 27 kV
	SIL (polymer)	15, 27 kV
S & C Electric	XS-Polymer	15, 27 kV
Southern States	Series 66	15, 27 kV
	Series 70	15 kV
United Copper Industries	APD1516100110	15 kV
	APD2712100125	27 kV

NOTE: The buyer should specify the load rating, voltage rating, interrupting rating and required accessories.

Cutouts used on underground riser poles should be loadbreak type or have hooks for portable load interrupters.

af - Cutout, open-link fuse support

Manufacturer	Mounting	12.5/7.2 kV 50 amp.	24.9/14.4 kV 50 amp.
Cooper Power Systems	Crossarm Bushing	FT1A2	FT1A4
		FT10A3	-
Kearney/Cooper Power Systems	Crossarm Bushing	6484-55	-
		6483-59	-

NOTE: The open link fuse supports listed above are fuse supports only and have no inherent interrupting capacity. They should be used with fuse links capable of interrupting at least 1200 amperes and for transformer protection only.

av - conductor

Manufacturer	Conditions
<u>Alcan Cable</u> Duplex type, with ACSR or AAAC (6201) conductors using preferred conductor sizes.	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
<u>Copperweld Southern</u> Alumoweld-aluminum 6/1 ACSR/AW, 2, 1/0, 2/0, 4/0 4/3 AWAC, 4, 2, 1/0	1. To obtain experience.
<u>General Cable</u> T-2 type, with ACSR or AAAC (6201) conductors using preferred conductor sizes.	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
ACSR/TW, ACSS or ACSS/TW conductors using preferred conductor sizes.	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations. 3. Indicate type of steel core wire and class (if applicable) of coating.
<u>Midal Cables Ltd.</u> ACCC/TW conductors using preferred conductor sizes.	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations. 3. Indicate type of steel core wire and class (if applicable) of coating.
<u>Nexans Canada</u> ACSR-II (T-2) type, with ACSR conductors using preferred conductor sizes	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
<u>Southwire</u> VR type, with ACSR or AAAC (6201) conductors using preferred conductor sizes.	1. To obtain experience. 2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.

av - conductor

Viakon

Type ACSS, using preferred conductor sizes.

1. To obtain experience.
2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
3. Indicate type of steel core wire and class (if applicable) of coating.

Viakon Conductores Monterrey

ACSR/AW-TP conductors using preferred conductor sizes.

1. To obtain experience.
2. Conductor handling and installation shall be in accordance with manufacturer's recommendations.
3. Indicate type of steel core wire and class (if applicable) of coating.

be - Reclosers, vacuum interrupter

Manufacturer	Conditions
<u>ABB</u>	
Three phase Type ESVA rated 560/800 amps continuous, 12,000 amps symmetrical, maximum voltage 15.5 kV for 12.5/7.2 kV	To obtain experience.
Three phase Type ESMVA rated 560 amps continuous, 16,000 amps symmetrical, maximum voltage 15.5 kV for 12.5/7.2 kV	To obtain experience.
<u>Cooper Power Systems</u>	
Single phase, Type V4H rated 5-100 amperes continuous, 2,000 amperes symmetrical, maximum voltage 15.5 kV for 12.5/7.2 and 13.2/7.62 kV	To obtain experience.
Single phase, Type V4L rated 50-100 amperes continuous, 6,000 amperes symmetrical, maximum voltage 15.5 kV for 12.5/7.2 and 13.2/7.62 kV	To obtain experience.
Three phase, Type V6H rated 5-100 amperes continuous, 2,000 amperes symmetrical, maximum voltage 15.5 kV for 12.5/7.2 and 13.2/7.62 kV	To obtain experience.

NOTES:

1. Series trip reclosers with ratings greater than 100 amp for 12.5/7.2 kV application, greater than 200 amp for 24.9/14.4 kV application, and 280 amp for 34.5/19.9 kV application are acceptable only with ground trip device. Shunt trip reclosers without ground trip devices may not be used with trip settings higher than 200 amp for 12.5/7.2 kV application, greater than 400 amp for 24.9/14.4 kV application, and 560 amp for 34.5/19.9 kV application.
2. Reclosers are not acceptable with load current, bushing CT battery chargers.

be - Recloser, vacuum interrupter

Manufacturer	Conditions
<u>Cooper Power Systems</u>	
Three phase, Type VWVE38 rated 560 amperes continuous, 12,000 amperes symmetrical, maximum voltage 38 kV for 34.5/19.9 kV	To obtain experience.
Three phase, Type VSO-12 rated 560 amperes continuous, 12,000 amperes symmetrical, maximum voltage 38 kV for 34.5/19.9 kV	To obtain experience.
Three phase, Type VSO-16 rated 560 amperes continuous, 12,000 amperes symmetrical, maximum voltage 38 kV for 34.5/19.9 kV	To obtain experience.
Single phase, type VXE electronically controlled, vacuum interrupting, rated 10-200 amps continuous, 8000 amperes symmetrical, maximum voltage of 15.5 kV for 12.5/7.2 kV & 27 kV for 24.9/14.4 kV systems	To obtain experience.
<u>Engineering &amp; Equipment de Mexico</u>	
Three phase, type, EEVW15, rated 25 to 560 amp continuous, 12000 amp interrupting, maximum voltage 15.5 kV for 12.4/7.2 kV.	To obtain experience.
<u>Hubbell Power Systems</u>	
Single phase, Type VERSA-TECH electronically controlled, vacuum interrupting, rated 400 amperes continuous, 8,000 amperes symmetrical, maximum voltage of 27 kV for 24.9/14.4 kV systems	To obtain experience.
<u>Joslyn</u>	
Three phase, Type JVR, SF6 insulation, rated 400 amps continuous, 6,000 amperes symmetrical, maximum voltage 15 kV for 12.5/7.2 kV	To obtain experience.

NOTES:

1. Series trip reclosers with ratings greater than 100 amp for 12.5/7.2 kV application, greater than 200 amp for 24.9/14.4 kV application, and 280 amp for 34.5/19.9 kV application are acceptable only with ground trip device. Shunt trip reclosers without ground trip devices may not be used with trip settings higher than 200 amp for 12.5/7.2 kV application, greater than 400 amp for 24.9/14.4 kV application, and 560 amp for 34.5/19.9 kV application.
2. Reclosers are not acceptable with load current, bushing CT battery chargers.

be - Recloser, vacuum interrupter

Manufacturer	Conditions
<u>Lexington Switch</u> Single phase, type EV627 rated 400 amp continuous, 6000 amp interrupting, maximum voltage 27 kV for 24.9/14.4 kV	To obtain experience.
Single phase, type EV815 rated 400 amp continuous, 8000 amp continuous, maximum voltage 15.5 kV for 12.9/14.4 kV	To obtain experience.
<u>Whipp &amp; Bourne</u> Three-phase, Type GVR, SF6 insulation with vacuum interruption, 560 amps maximum continuous, 12000 amps RMS symmetrical interruption for 15.5 kV and 27 kV, 8000 amps RMS symmetrical for 38 kV. 15.5 kV maximum voltage for 12.5/7.2 kV, 27 kV maximum voltage for 24.9/14.4 kV, 38 kV maximum voltage for 34.5/19.9 kV.	To obtain experience.

NOTES:

1. Series trip reclosers with ratings greater than 100 amp for 12.5/7.2 kV application, greater than 200 amp for 24.9/14.4 kV application, and 280 amp for 34.5/19.9 kV application are acceptable only with ground trip device. Shunt trip reclosers without ground trip devices may not be used with trip settings higher than 200 amp for 12.5/7.2 kV application, greater than 400 amp for 24.9/14.4 kV application, and 560 amp for 34.5/19.9 kV application.
2. Reclosers are not acceptable with load current, bushing CT battery chargers.

be - Recloser, vacuum interruption with solid dielectric

Manufacturer	Conditions
<u>ABB</u> Single phase, Type OVR electronically controlled, vacuum interruption, solid dielectric, 800 amps maximum continuous, 10000 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 27 kV maximum for 24.9/14.4 kV.	To obtain experience.
Three phase, Type OVR electronically controlled, vacuum interruption, solid dielectric, 630 amps maximum continuous, 12500 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 27 kV maximum for 24.9/14.4 kV.	To obtain experience.
Three phase, Type OVR electronically controlled, vacuum interruption, solid dielectric, 800 amps maximum continuous, 16000 amps RMS symmetrical interruption, 38 kV maximum for 34.5/19.9 kV.	
<u>Cooper Power Systems</u> Three phase, Type NOVA electronically controlled, vacuum interruption, solid dielectric, 560 amps maximum continuous, 12000 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 27 kV maximum for 24.9/14.4 kV.	To obtain experience.
Single Phase, Type NOVA electronically controlled, vacuum interruption, solid dielectric, 400 amps maximum continuous, 8000 amps RMS symmetrical interruption, or 800 amps maximum continuous, 12500 amps RMS symmetrical interruption 15.5 kV maximum for 12.5/7.2 kV, 29.2 kV maximum for 24.9/14.4 kV.	To obtain experience.
Three phase, Type NOVA-TS Triple-Single electronically controlled, vacuum interruption, solid dielectric, 400 amps maximum continuous, 12500 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 29.2 kV maximum for 24.9/14.4 kV.	To obtain experience.

NOTES:

1. Series trip reclosers with ratings greater than 100 amp for 12.5/7.2 kV application, greater than 200 amp for 24.9/14.4 kV application, and 280 amp for 34.5/19.9 kV application are acceptable only with ground trip device. Shunt trip reclosers without ground trip devices may not be used with trip settings higher than 200 amp for 12.5/7.2 kV application, greater than 400 amp for 24.9/14.4 kV application, and 560 amp for 34.5/19.9 kV application.

2. Reclosers are not acceptable with load current, bushing CT battery chargers.

be - Recloser, vacuum interruption with solid dielectric

Manufacturer	Conditions
<u>G &amp; W Electric Company</u> Three phase, electronic, VIPER Series, vacuum interruption, solid dielectric, 800 amps maximum continuous, 12,500 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 27 kV maximum for 24.9/14.4 kV.	To obtain experience.
<u>Joslyn Hi-Voltage</u> Three-phase, Type TRIMOD 300 series, vacuum interruption, solid dielectric foam, 560 amps maximum continuous, 12000 amps RMS symmetrical interruption, 15.5 kV maximum for 12.5/7.2 kV, 27 kV maximum for 24.9/14.4 kV	To obtain experience.
Single-phase, Type TRIMOD 100 series, vacuum interruption, solid dielectric foam, 560 amps maximum continuous, 12500 amps RMS symmetrical interruption, 17.1 kV maximum for 12.5/7.2 kV, 29.3 kV maximum for 24.9/14.4 kV	To obtain experience.
<u>Siemens</u> Three-phase, Type Centurion rated 630A maximum continuous, electronically controlled, vacuum interruption, solid dielectric, 12500 amps RMS symmetrical interruption, C1512 (15.5 kV maximum for 12.5/7.2 kV), C2712 (27 kV maximum for 24.9/14.4 kV)	To obtain experience.

NOTES:

1. Series trip reclosers with ratings greater than 100 amp for 12.5/7.2 kV application, greater than 200 amp for 24.9/14.4 kV application, and 280 amp for 34.5/19.9 kV application are acceptable only with ground trip device. Shunt trip reclosers without ground trip devices may not be used with trip settings higher than 200 amp for 12.5/7.2 kV application, greater than 400 amp for 24.9/14.4 kV application, and 560 amp for 34.5/19.9 kV application.

2. Reclosers are not acceptable with load current, bushing CT battery chargers.



U hv - Cable, Underground

600 Volt Cable

(Alternative Cable Constructions)

Applicable Specification: RUS Specification U-2 (except as indicated below)

NOTE: Manufacturers listed below are conditionally accepted for alternatives A, B, C, D and/or E for the products listed on pages U hv-2 and U hv-3.

Alternative A: 8000 series aluminum alloy in accordance with ASTM B800 or B801.

Alternative B: Stranding in accordance with ASTM B786 for aluminum 1350 conductors or ASTM B787 for copper conductors.

Alternative C: Abuse resistant (ruggedized) (single or two layer) insulation in accordance with ICEA S-81-570.

Alternative D: Self-healing

Alternative E: Stranding in accordance with ASTM B 901 for Compressed Round Stranded Aluminum Conductors Using Single Input Wire Construction

Condition: To obtain experience.

<u>Manufacturer</u>	<u>Alternative</u>
Alcan	(A) (C) (E)
BICC	(A) (C)
Conductores Monterrey, S.A. de C.V.	(C)
Prysmian	(A) (C) (D)
Nexans	(C)
Southwire	(A) (B) (C) (D) (E)